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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,915	05/11/2006	Shozaburo Konishi	04703/0203963-US0	4217
7278	7590	01/20/2010		
DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER VASISTH, VISHAL V	
			ART UNIT	PAPER NUMBER
			1797	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,915	<b>Applicant(s)</b> KONISHI ET AL.	
	<b>Examiner</b> VISHAL VASISTH	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 10-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicants' amendments filed on 10/22/2009 amended independent claims 1 and 5-6, dependent claims 2 and 7, cancelled claims 3 and 7 and added new dependent claims 10-12. Applicants' amendments overcome the 35 USC 103 rejections over Miyake in view of Berlowitz and Shirahama. Applicants' arguments also filed on 10/22/2009 regarding the 35 USC 102 rejection over Mabuchi are persuasive. Therefore all of the rejections from the office action mailed on 7/23/2009 have been withdrawn. A new ground of rejection necessitated by the amendments is set forth below.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: claim 1 recites, "a base oil (X) consisting at least one of a," this is improper Markush expression. It can be corrected by reciting, "selected from the group consisting of . . . ." Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-2, 4-7 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al., JP Publication No. 2000-297373 (hereinafter referred to as Miyake) in view of Yagishita et al., US Patent Application Publication No. 2002/0142922 (hereinafter referred to as Yagishita).

Miyake discloses a lubricant (as recited in claims 1 and 5-6) and a system having a pair of DLC contacting faces being opposed to each other and moving relative to one another, wherein at least one of which is coated with a DLC film (as recited in claim 1) and is suitably used in lubricating oils such as an engine and transmission oil (as recited in claims 4-5) (Para. [0001]-[0002] and [0005]).

Miyake as discussed above discloses the presence of a lubricating oil which can be used on a DLC coated surface in order to reduce the coefficient of friction. Miyake does not, however, explicitly disclose a base oil wherein at least one of a hydrocracked mineral oil, a wax-isomerized mineral oil, and a poly-alpha-olefin base oil having a kinematic viscosity of 3.5 to 5 mm<sup>2</sup>/s at 100° C, a total aromatic content of 0 to 2 mass%, and a total sulfur content of not higher than 0.002 mass %. Miyake also does not explicitly disclose the sulfur content of the lubricant or the additives present in the lubricant.

Yagishita discloses a lubricating oil composition for an internal combustion engine (Para. [0021]) comprising a poly- $\alpha$ -olefin synthetic base oil (as recited in claims 1 and 5-6) (Para. [0029]) having a kinematic viscosity of more preferably between 2 and 10 mm<sup>2</sup>/s at 100° C (which is within and overlaps the kinematic viscosity range as recited in claims 1 and 5-6) (Para. [0021] and Table 1), a total aromatic content having an upper limit of 2 mass% (within and encompassing the aromatic range as recited in claims 1 and 5-6) (Para. [0024] and Table 2) and a total sulfur content of particularly preferably 0.005 mass% or less (within and overlapping the sulfur content range as recited in claims 1 and 5-6) (Para. [0023] and Table 2).

The fully formulated composition of Yagishita further discloses additives including 0.1 to 15 mass% of an alkali metal or alkali earth metal salicylates detergents (sulfur-free metal detergent as recited in claims 1 and 5-6 and salicylate as recited in claims 10-12) (Para. [0075] and [0090]), 0.01 to 5 mass% of a zinc dialkylphosphate (zinc dialkylphosphate as recited in claims 1 and 5-6) (Para. [0048] and [0051]), 0.01 to 5 mass% friction modifiers including long-chain aliphatic amines, long-chain fatty acids, long-chain fatty acid esters and long-chain aliphatic alcohols (friction modifiers as recited in claims 1 and 5-6) (Para. [0126]) and antioxidants such as dialkyldiphenylamine (sulfur-free ashless antioxidant as recited in claims 2 and 7) (Para. [0117]). Based on the molecular masses of the metal components in each of the detergent zinc dialkylphosphate components and their respective concentrations within the base oils there is at

least an overlap between the metal contents disclosed in Yagishita and the those recited in instant claims 1 and 5-6.

Based on the discussion above with the limited amount of sulfur content in the base oil, the lubricant composition particularly preferably has a sulfur content of 0.05 mass% or less (as recited in claims 1 and 5-6) (Para. [0133]).

Furthermore, no mandatory additives containing sulfur are present in the lubricant composition (as recited in claims 1 and 5-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the base oil and additives of Yagishita in the composition of Miyake in order to enhance the high-temperature detergency and fuel efficiency of the lubricant composition (Para. [0006]-[0008] of Yagishita).

### ***Response to Arguments***

6. Applicants' arguments filed on 10/22/2009 respect to claims 1-2, 4-7 and 10-12 have been fully considered and are not persuasive in regards to demonstrating unexpected results.

Applicants contend that the instant claims 1 and 5-6 are commensurate in scope with the specification, specifically the examples on pages 63-66 of the disclosure, and have demonstrated unexpected results. The data, however, is still not commensurate in scope with the claims. For example, the inventive oils from the instant specification include a calcium salicylate having a TBN of 166 and a calcium content of 6.2 mass% present in a concentration of 3 mass%. Claim 1 merely recites 0.05 to 0.3 mass% in terms of metal elements of alkali

metal or alkaline earth metal salicylate. Also, the friction modifiers are glycerin monooleate present in a concentration of 1 mass%. Claim 1 merely recites 0.05 to 3.0 mass% of a friction modifier consisting of at least one of an oxygen-containing organic compound and aliphatic amines and does not include the concentrations. Furthermore, the sulfur-free antioxidants present in examples 5 in table 6 are specific compounds present in a concentration of 1 mass%.

Also, in applicant's tables only Table 6 and specifically examples 5-1 and 5-5 have all the limitations of instant claims 1 and 5-6. Example 5-5 further comprises the sulfur-free antioxidant which is not present in instant claims 1 and 5-6 and is also not present in example 5-1. These two examples do not demonstrate the best results across all time limits amongst the example oils. This can hardly be shown to demonstrate unexpected results. Finally, the comparative examples recited in the instant specification are not those represented by the closest prior art which is needed in order to demonstrate unexpected results. A showing of additives in specific concentrations and the relationship between those additives and the additives represented by the closest prior art will demonstrate unexpected results.

### ***Conclusion***

7. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL VASISTH whose telephone number is (571)270-3716. The examiner can normally be reached on M-R 8:30a-5:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VVV

/Ellen M McAvoy/  
Primary Examiner, Art Unit 1797